THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte THOMAS D. HAYES

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Appeal No. 1997-0659
Application 08/318,462

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ON BRIEF

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Before JOHN D. SMITH, GARRIS, and OWENS, Administrative Patent Judges.

JOHN D. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal pursuant to 35 U.S.C. § 134 from the final rejection of claims 1 through 16.

Appealed claim 1 is representative and is reproduced below:

1. A process for in-situ remediation of contaminated soils comprising:

introducing at least one treating agent into a contaminated
soil; and

transporting said at least one treating agent to an underground in-situ treatment zone of said contaminated soil by means of a foam-based fluid.

The references of record relied upon by the examiner are:

Hoge et al. (Hoge)	4,203,837	May 20, 1980
Kirk et al. (Kirk)	4,435,292	Mar. 6, 1984

Gannon, "Environmental Reclamation Through use of Colloid Foam Flotation, In-Situ Soil Aeration and In-Situ Surfactant Flushing," Dissertation Services, pp. 1-166 (1988).

Gannon Abstract, Dissertation Abstracts International, Vol. 50, No. 3, p. 975-B (1989).

Lindgren et al. (Lindgren), "Electrokinetic Remediation of Unsaturated Soils," ACS Symposia Series, Vol. 554, pp. 33-50, (1994).

Appealed claims 1, 2, 6, 8, 9, and 11 through 14 stand rejected under 35 U.S.C. § 102(b) as anticipated by the Gannon Abstract. Claims 3 through 5 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined teachings of the Gannon Abstract and Kirk. Claims 10 and 15 stand rejected under 35 U.S.C. § 103 over the combination of teachings in the Gannon Abstract, Kirk, and Hoge. Claim 16 stands rejected

under 35 U.S.C. § 103 as unpatentable over the combination of the Gannon Abstract, Kirk, and Lindgren.

We cannot sustain the stated rejections. The subject matter on appeal is directed to a foam transport process for in-situ remediation of contaminated soils in which at least one treating agent, such as nutrients, trace metals, bacterial cultures, oxidants, solvents and/or surfactants, is introduced into a contaminated soil and transported by a foam-based fluid to an underground in-situ treatment zone of the contaminated soil. In a preferred embodiment of the invention, the foam-based fluid comprises an organic foam comprising between about 5% and about 50% of a liquid and between about 50% and about 95% of a gas. See the specification at page 13. As appellant makes clear in the Summary of Invention section of his brief, the critical feature of the process of the claimed invention is the use of a foam-based fluid to transport "at least one treating agent" to the underground in-situ treatment zone of the contaminated soil.

The examiner's anticipation rejection of appealed claims 1, 2, 6, 8, 9, and 11 through 14 is predicated on his factual determination that the Gannon Abstract teaches a process for

in-situ remediation of contaminated soil by introducing a foam-based fluid which contains a surfactant, and then removing the foam from the contaminated soil for the recovery and recycling of the surfactant solution. As further explained in his answer at page

9, it is the examiner's position that based on the title of the

Gannon Abstract, the Abstract is directed to treating soil in-situ with colloidal foam.

On the other hand, appellant correctly points out that the title of the Gannon Abstract states three separate and distinct areas that are discussed in the entire Gannon reference. As appellant correctly points out, the section of the complete Gannon reference that discusses foams, relates to the use of colloidal foam flotation to remove metals from a very dilute liquid solution, not, contaminated soil, as required by the appealed process. In the experiments described in this section of the complete Gannon reference (which is entitled "Removal of Antimony from Aqueous Systems")

at pages 4 through 27 of the reference, foam simply is not passed through a static soil porous medium as required by the process of the claimed invention. As appellant further points out, nowhere in the Gannon reference is the process of a foam-based fluid passing through a static soil either taught or suggested. The mere happenstance that the words "foam" and "soil" appear in the same title is not sufficient, as appellant argues, to describe the herein claimed process.

As the examiner correctly observes, the Gannon reference does disclose a chapter entitled "Soil Clean-Up By In-Situ Surfactant Flushing" which appears at pages 94 through 129 of the complete reference. However, again, as appellant emphasizes, this section of the Gannon reference does not disclose the removal of pollutants from a static soil matrix with a foam-based fluid. As appellant correctly points out at page 5 of his reply brief, the surfactant applications discussed in this chapter of the Gannon reference relate to the placement of surfactant into a water fluid and passing a water solution through the soil. Again, in this section of the Gannon reference, there is no teaching or suggestion to use surfactants to make a foam which is then passed through a

static soil medium to achieve pollutant removal.

Both the question of what a prior art reference teaches and the question of anticipation under section 102(b) of the statute are factual determinations. See In re Graves, 69 F.3d 1147, 1151, 3 USPQ2d 1697, 1700 (Fed. Cir. 1995). Here, the examiner's factual determination of what the Gannon Abstract and Gannon complete reference teaches is erroneous. It logically follows under the circumstances of this case, that the examiner's rejection of appealed claims 1, 2, 6, 8, 9, and 11 through 14 as anticipated by the Gannon Abstract cannot be sustained. Moreover, since none of the "secondary references" relied upon by the examiner in his stated 35 U.S.C. § 103 rejections of the remaining claims on appeal remedy the basic deficiencies regarding the teachings in the Gannon Abstract, these rejections similarly cannot be sustained.

The decision of the examiner is reversed.

REVERSED

John D. Smith)
Administrative Patent Judge)
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Bradley R. Garris	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
Terry J. Owens	)	
Administrative Patent Judge	)	

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